

47. The method of claim 45 wherein said heterocyclic base functionalized nucleoside is functionalized with an enzyme, a peptide or a protein.

48. The method of claim 45 wherein said heterocyclic base functionalized nucleoside is functionalized with a vitamin.

49. A method of effecting cellular uptake of a compound having a plurality of linked nucleosides, comprising contacting an organism with said compound wherein said compound includes at least one inter-strand nucleoside having a steroid molecule, an enzyme, a peptide, a protein, or a vitamin linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

50. The method of claim 49 wherein said inter-strand nucleoside has a steroid molecule linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

51. The method claim 50 wherein said inter-strand linkage is not the inter-strand linkage between the first and the second nucleosides at the 3' terminus or the 5' terminus of said oligonucleotide.

52. The method of claim 49 wherein said inter-strand nucleoside has an enzyme, a peptide or a protein linked to an inter-strand linkage linking said inter-strand nucleoside to an adjacent nucleoside.

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